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ABCD-0012

Space Analysis & Measurement Program (SAM)

**DoD Space Experiments Review Board (SERB)
November 2006**

1. Red text provides additional guidance and should be deleted when no longer needed.
2. Mandatory Slide
3. Add FOUO or other marking to other pages as needed. Remove Distribution Statements and Marking if not required.

Briefer's Name (If not the PI)

**Principal Investigator:
Name**

**Organization
Phone number
Email address**

Sponsor: Organization

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Intro and Background

- Introduction
- Describe Issue, Phenomenon, or Problem

Graphics

Graphics

1. Optional Slide
2. Not meant to be details about the experiment, instead answer what the broad issue, phenomenon, or problem that is being addressed.
3. This slide can also be used to provide the history of previous experiments or efforts (Some info may be contained in DD 1721 Block 19).

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Experiment Concept

Objective: Summarizes data provided in 1721 Block 16



Graphics

1. Mandatory Chart
2. Details on the Experiment
3. Limit the number of acronyms, and spell out all that are used

Previous Priority:

- 2 of 26: 2006 Service SERB
- 5 of 44: 2005 DoD SERB

Description:

- Summarizes data provided in 1721 Block 18

Comparison to Alternatives: (if applicable)

- ANARS ± 800 ft and 1 arc sec pointing accuracy
- GPS more accurate (± 10 ft) but does not provide autonomy
- NASA's SANS program not fully autonomous, less accurate

Complementary Experiments: (if applicable)

- List other experiments that proposed experiment augments or complements
- List any experiments that this one could fly with and why
- Describe if / how this experiment could leverage another program or experiment

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Technology & Development

Graphics

Major Instrument or Equipment:

- Emphasize what is new; any pushing-the-envelope technologies aspects

Instrument or Equipment Operation:

- Summarize science and/or technology and how it works drawing details from 1721 Blocks 18, 19, & 22

Experiment Funding:

\$M	Prior	FY06	Future	Total
Req't	2.4	7.2	5.1	14.7
Actual	2.4	6.5	4.8	13.7

Hardware Status:

- Technology Readiness Level: —
- Subscale testing complete
- CDR: Early 2008
- Flight Ready: May 2009

1. Mandatory Chart

2. "Major Instrument or Equipment" and Equipment Ops should be drawn from data in 1721 Blks 18, 19, & 22.

3. Funding s should match 1721 Blk 27, except provide consolidated Required and Actual Funds vice breakout by Organization. The single FY title should be changed to reflect the present FY.

4. Hardware status should match 1721 Blks 24-26. At a minimum, include TRL and flight ready date.

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Comparison

	iMESA	SSIES3	API	REEPER	CEASE I/II
Capability	0-20 eV	Lang. probe derived	Hall thruster diagnostics	Radiation monitor 1-10 MeV	Radiation monitor (5 keV -1GeV)
Mass (kg)	0.15	10.4	2.2	7	1-1.1
Other Parameter X	XXX	XXX	XXX	XXX	XXX
Other Parameter Y	YYY	YYY	YYY	YYY	YYY

1. Optional Slide
2. Where does this technology fit in amongst related experiments (with a focus on SERB experiments); what's unique about this experiment?

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Military Relevance

Military Needs:

- Note urgency and / or importance of need, whether it is a Joint need, etc
- Potential applications to existing operational systems such as AWS, DMSP, Future communication systems
- Technology base new initiative for “Survivable Satellite” ACTD #123

Graphics

Graphics

Documentation:

- Supports STRATCOM IPL #1234
- AFSPC MNS 003-91, pg 3-4, paragraph 3.3.2, Spacecraft Navigation
 - Supports operational requirements for NPOESS, SBIRS
 - Addresses satellite navigation deficiency identified in AFSPC MAP's

1. Mandatory Slide
2. Should match 1721 Block 17
3. Cite specific references to documented military requirements to include relevance to a) existing operational programs, b) engineering and development phase, and c) high priority R&D initiatives (e.g.; ACTDs, JCTDs, etc.)

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Flight Requirements

Need for Spaceflight

- Address why this can not be done on the ground, in a drop, tower, in a vacuum, etc.
- Test for accuracy not achievable on the ground
- Tracking rates unrealistic if tried from ground/air
- Required for risk-reduction prior to deployment of first WidgeSat in FY10

1. Mandatory Chart

2. Data should match 1721 Blks 15, 37-44, and/or 58-64

3. Bracketed text provides options

Experiment / Flight Data:

- [Full Space Craft or Instrument]
- Apogee: ____ +/- ____ km
- Perigee: ____ +/- ____ km
- Inclination: ____ +/- ____ deg
- Physical Data: ____ m³, ____ kg, nominal ____ W
- Experiment Retrieval Required: [Yes or No]
- Repetitive/incremental step flights: [Yes or No]

Requested STP Services

- Launch Services
- Launch Integration
- Spacecraft Development
- Operations
- Spacecraft/Experiment Integration
- Data Distribution
- Other

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Technology Transition Plan

Transition Plan

- The AFRL and DARPA will utilize the data to develop a guidance system
- Satellite rendezvous without human input
- 50% increase in data rate transfer
- Enable formations of satellites to autonomously transfer from a communication mission configuration to a reconnaissance mission configuration
- The data analysis will be complete 18 months after the experiment is launched

1. Optional Slide
2. Draw from 1721 Block 23
3. Provide details on how the experiment results will be used and by whom.
4. Describe what the next step will be – further experiments, identification of a sponsor (s) to develop an operational version, etc